

ing total anesthesia and loss of the corneal reflex.

This procedure is effective and reasonably safe, making it acceptable to both patients and physicians. By eliminating the stresses and dangers of a general anesthetic, an open operative procedure and a prolonged period of recuperation, the procedure is well tolerated even by elderly and debilitated patients. In the event pain recurs it can readily be repeated. Percutaneous thermocoagulation of the trigeminal ganglion represents a reasonable alternative to the surgical treatment of facial pain and rapidly is becoming the treatment of choice for trigeminal neuralgia after the failure of medical management.

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Intracerebral Hematoma

HEMORRHAGE WITHIN BRAIN SUBSTANCE is a common cause of major neurologic disability and death. It may occur under many circumstances, but is most commonly seen in hypertensive patients of both sexes, usually occurring during periods of activity and producing neurologic symptoms and signs over a short time-interval, sometimes within minutes and usually within 24 hours. Unlike subarachnoid hemorrhage, secondary to aneurysms, the hemorrhage does not tend to recur. Brain tissue may be destroyed, but often is compressed and displaced. With the advent of computed tomographic scanning, lumbar puncture usually is not necessary. Severe headache is a very common, but not invariable, accompaniment of the development of intracerebral hematoma.

The probable presence of hematoma within the brain may be established on clinical grounds in most cases, and may be confirmed by the finding of an avascular mass on angiography. Computerized axial tomography will accurately identify the presence, size, configuration and location of an intracerebral hematoma, or identify a coexisting primary vascular lesion. Possibly of greatest importance is that the neurologic deficits produced by an intracerebral hematoma may be reversed by surgical removal of the mass, with relief of brain compression and often a dramatic return of the neurologic status toward normal. The combination of the availability of recent, accurate and

safe diagnostic and surgical techniques, including brilliant illumination and direct visualization afforded by the operating microscope following removal of the hematoma, justifies an active and energetic approach to every patient in whom the presence of intracerebral hematoma is suspected.

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Penetrating Brain Injury

BRAIN TRAUMA secondary to intracranial passage of a bullet or other object is one of the most serious categories of central nervous system injury. However, a commonly held belief that all such trauma is uniformly fatal is unfounded. There are several reasons for optimism following prompt, aggressive surgical treatment in selected cases, as extensively documented in both military and civil experience.

First, the site of brain injury may be superficial, or confined to "silent" or less critical areas such as frontal or temporal tip. Second, the site of skull penetration, with frequently associated complex fracture, may provide immediate decompression and relief, or control in part, of rising intracranial pressure. It may be for this reason that every neurosurgeon has seen cases of loss of some brain tissue through the skull aperture with later recovery. Third, the missile tract itself may be slender and the elevated pressure and neurologic findings may be the result of the presence of hematoma, within or adjacent to the tract. Such hematoma may be extruded from tract during exploration, and removal often is followed by restoration of normal intracranial pressure. The improvement in neurologic status is sometimes immediate and striking.

Passage through the brain of high velocity missiles may be expected to produce more widespread cerebral injury. A complication of both low and high velocity trauma is the later development of cerebral abscess, if debridement with removal of bone fragments has been incomplete. In all cases, x-ray studies of the skull are required to show the extent of bony injury, the position, when present, of in-driven bone fragments, and the precise trajectory involved. Both angiography